

THE INFORMATION SEEKING BEHAVIOR AND NEEDS OF JOURNALISTS IN CONTEXT

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The advent of technologies introduced into both newsrooms and the American culture — in the past ten years has changed the needs and habits of print and television journalists. The proliferation of information on the Internet, the diffusion of communication technologies such as cell phones and personal digital assistants (PDA) have increased journalists capabilities at both seeking and gathering information for their work. This paper describes a day in the life of three different journalists and their information seeking needs and behaviors throughout the course of that day. The paper analyzes the journalists' behaviors and needs using a model created by Nicholas and Martin (1998) that characterizes information needs. The journalists participating in the study used new technologies such as the Internet, PDAs and cell phones at varying levels, depending upon their personal preferences and their views regarding the most efficient and reliable means of reporting the news.

Headings:

Information needs – Case studies

Information needs – Evaluation

Information needs – Special subjects - News

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Introduction

Petroglyph, papyrus, printing machine, radio and television. Scribe, town crier, gossip, reporter, journalist. This is the evolution and revolution of sharing information. Although archeologists and anthropologists have broken down prehistoric human roles to hunters and gatherers, surely there was somebody painstakingly scratching rocks and recording information. That role of sharing and recording information continues to this third millennium.

Journalists, by the nature of their profession, are information gatherers. Throughout the past century they have gathered information from primary sources and obtained information via word of mouth -- usually through face to face or telephone interview. These patterns can change depending on a number of factors, including the journalist's training, personal preference, the organizational culture where the journalist lives and works, etc. They also differ among differing reporting areas, sometimes called "beats," such as sports, crime, education, foreign affairs, and entertainment. However, in recent years, the "information revolution" has changed in a way that is light years away from the technological advances of the past. By the end of the 20th century, the adoption of digital archives, the internet, and desktop accessibility to a range of databases for most reporters in the newsrooms of metropolitan dailies was complete (Semonche, 1996). These changes allow journalists access to information they may not previously have enjoyed, and allow it within the space of a few moments.

Have those changes altered reporting needs and methods? Do journalists' information needs match their information gathering behaviors? Is there a gap that is evidenced by emerging technologies? Should news library/research departments adjust their services to meet new or changing needs? Most of the research done on the information seeking or gathering behavior of journalists in the past 10 years can be found not in the United States, where technology is rapidly being adopted, but in Europe and Asia. Thus it is important to investigate those needs and behaviors among reporters in the United States. This study focused on finding patterns of habit, use, and perceptions of needs and identifying issues within their respective contexts.

Literature Review

Academic research conducted by those in the library/information science field studying issues surrounding U.S. reporters has been sparse and devoted more towards single technology adoptions, information management practices, and education (which will not covered in this review). A review of the literature reveals that a holistic approach considering all information methods and types has not been pursued by researchers studying American journalists recently.

Millen and Dray (2000) studied the use of a particular listserv by American journalists who were early adopters of digital technologies. Data collection techniques, including participant observation, were utilized. Their quantitative analysis of the archive of this listserv revealed that there is a small, active community of journalists interested in utilizing new technologies, such as databases to aid them in reporting. Their study indicates that there are reporters who have a positive, active relationship with technology and that they found it to be useful in their work.

Rosamma Joseph conducted a survey of Indian journalists in the Indian state of Kerala who were in environments that had very little access to technology (1993). This particular study focused on journalists' use of libraries -- both news libraries and other libraries. The results of the study suggest that journalists in Kerala used the library mainly for background information on stories, while editors use the library to assist them in editing said stories. 86% of those surveyed use the library more than once a week, with most respondents spending an hour or less there. Time constraints due to deadlines are discussed at length, but the issue is not directly addressed in the survey. Instead questions focus on who looks for information needed for a story, the type of print material journalists

use and the purpose of its use, how often journalists use print material for a story, how much time they spend in a library and how long they “have to wait” for information.

Henk Vreekamp (1995) also looked at the attitudes of journalists in non-metropolitan settings. His studies concentrated on journalists in Curacao, an island in the Caribbean, and Zeeland, a remote island located in the Netherlands. Vreekamp found that journalists in these smaller settings had information seeking attitudes that reflected the parochial attitudes of the communities in which they lived. Consequently, their information behaviors relied heavily on established ties to the community, if the journalists were perceived to be "insiders," while those who were considered "outsiders" were forced to be more creative in their attempts to secure information and to research their stories more thoroughly. Education did not play a role in information seeking behaviors, but age, gender and lifestyle did. One interesting finding of his research, found through interviews conducted, was that "Journalists are hostile or just baffled by arranged, indexed, pre-coded information." (p.49) Vreekamp likens this attitude to perhaps a worldview held by journalists wherein organized information is akin to the organized power structure of business and politics, of which, he postulates, they are inherently distrustful. Whether this is true of all journalists working in small communities, regardless of their location, or true of journalists in less developed countries, such as Curacao and the Netherlands, would be fodder for further research. Certainly a companion study focusing on the information seeking needs of U.S. journalists working in remote communities would prove most interesting.

Nicholas and Martin (1997), two British researchers, have published the most comprehensive case study of journalists' information needs thus far. Fifty semi-structured

1-hour taped interviews of journalists at 3 major British national newspapers were conducted. The study focused on needs and not habits or behavior; thus, hard data on current journalistic practice is not included. Based on their findings, they developed a framework for understanding the operating requirements (e.g., subject, function, viewpoint, etc.) of journalists' utilizing twelve information needs characteristics. (See Appendix A). Four barriers that stand in the way of journalists being able to meet those information needs are also used in data analysis. They are: time, access, training and information overload.

Hannele Fabritius' (1997, 2000) research into the information seeking behavior of Finnish journalists first considered seven hierarchical concepts that move on a continuum from the specific to the general. Fabritius proposes the context of the journalists' world must be studied by looking at the following issues:

- journalistic culture
- medium
- subject
- work practice
- item processing (the actual writing of articles)
- information seeking and information retrieval.

This view of how journalists seek information is markedly different from Nicholas and Martin' who view information needs as being an integral part of the journalistic work culture.

Fabritius' most recent work (2000) targets one place in this hierarchy -- the item processing of information. She terms this "materialized use" which is the role of information in the process of preparing a piece of news.

Fabritius adapts a classification model of information use for journalists which is different than the model used by Nicholas and Martin, which classified the information needs instead. The information use model has, in turn, been used to create another model which seeks to clarify how journalists process information for use in articles. Like Solomon's information mosaic (1997) and Wilson's "uncertainty" feedback model (1999), it is cyclical, and like Kuhlthau it considers the affective behavior (feelings/perceptions) of the user. Needs of the journalists have not been considered in the present research for empirical study. Instead, use implies that need is being fulfilled.

Human Information Behavior Theory

Human information behavior is an area of library and information science rich with research and theory. The question of journalists' information habits and needs is better understood by first considering it within the larger context of human information behavior. One way to view the process of journalists' information seeking behavior is through the prism of Carol Kuhlthau's oft-cited model of the information search process (1993).

Kuhlthau's model is a series of discrete stages based on Kelly's models of construction -- a theory of learning (1963). The model is holistic in its concept, as it includes cognitive, affective and physical aspects of the information seeker's behavior. One of the most significant findings of Kuhlthau's research is the relative *uncertainty* the information seekers feel throughout the process. This is an unexpected and often

unsettling facet in searching for information seekers. This principle of uncertainty proves to be a determination in the success or failure of the information seeker's efforts. Kuhlthau believes that expecting uncertainty and finding the means to deal with it are the only ways an information seeker can remain on task.

While the affective component of a user's situation is certainly important, Kuhlthau seems to emphasize it above other considerations in her model. External events (such as the temperature in the room and noise levels), systems (the quality and type of catalogs, indexes and databases available), and the cognitive, affective and physical states of others, (is the seeker in close physical contact with others during the search? Is the teacher yelling at the students today? Is the teacher or librarian available to answer their questions? Do the teacher and librarians comprehend their questions?) are not considered as factors that may or may not move the information seeker through the process of finding information. Journalists, who must learn and synthesize information daily, are highly dependent on these external factors when seeking information and reporting the news. For instance, if a journalist's source is "having a bad day" when the journalist calls them to confirm a fact, they may not wish to speak to them. If the journalist does not have access to essential information, because it is classified government information or considered a "trade secret" by a business, the information seeking process is stymied through the external factor and not because they felt *uncertain* about what to do next.

By contrast, Paul Solomon's work on *information mosaics* (1997) concentrates on the actions of the information seeker whom he calls the "doer." Solomon uses Kuhlthau's work to expand upon the idea that a pattern exists whenever someone seeks information. His notion is that if information seeking actions were colors, they would repeat themselves

in a pattern that would resemble a mosaic. Solomon believes that context forms the tasks, rules and resources that make up an information mosaic. Information exclusions, inclusions, and the drive to start or stop information seeking patterns are all issues that interest him. The theory is tested in three highly different contexts, those of work, school and work-*related* situations.

This research seems to suggest that in the work context, little change, evolution or learning is evident in the information seeker's behavior. Like Kuhlthau, his model is highly dependent on the individual, but unlike Kuhlthau, actions seem to rule the attitudes. For use in the context of journalists' information seeking behavior, this model is somewhat more inclusive than Kuhlthau's in its acknowledgement of outside forces that either help or hinder the seeker.

Sonnenwald (1997) also espouses a theory of human information behavior as a process and cites Kuhlthau's model as part of the basis for her hypotheses. Sonnenwald proposes that information behavior is a complex process and our understanding of it can be informed by research in many disciplines besides library and information science. Information behavior always occurs in a context with situations occurring within those contexts. For instance, the practice of journalism could be considered a context, while situations occurring within the context of journalism might be specific stories a journalist has been assigned to report. Social networks that exist within contexts and situations both affect information behavior and are affected by it.

In the case of journalists, the social networks that exist within the context and situations the information seeker finds themselves in might be the various sources they could consult to assist them in getting the story reported. Social networks might include

their colleagues at the news outlet where they work, colleagues at other news outlets, sources who work within the subject area which they are reporting on, etc. Using Sonnenwald's theory, a journalist might use information that could only be obtained through the social networks they developed. Once the story is published, it may have an impact on the relationship between the journalist and the source positively or negatively. Thus, the social network has both affected and been affected by the information seeking behavior of the journalist.

An individual involved in information seeking and retrieval has a view that is dependent upon these aspects (i.e., context, situations and social networks, and individual preferences.) *Information horizons* is the term Sonnenwald uses to characterize these aspects that inform the information seeker's behavior. A process model has been developed based on this framework to illustrate this concept of information horizons.

Sonnenwald believes this model is dynamic and can be interrupted by competing situations. The model, then, is not linear by nature, as opposed to Kuhlthau and Solomon's work, which characterize information seeking behavior as having more discrete steps. The most significant factors within the theory are the notions of multiple choices within an information horizon and the interdependent or symbiotic nature of situations and social networks.

Methodology

The present research is informed by previous research in this area, particularly the work of Nicholas and Martin and Hannele Fabritius. In addition to the importance of this study which will add to the scant literature on this topic, the research frameworks discussed above are highly applicable. A case study approach using the methods of observation and interview, in conjunction with available, relative documents was chosen in light of the discipline being studied. Journalists are ruled by deadlines and other people's schedule. Their time is predicated on getting the story, and then getting it written or broadcasted. Surveys, dependent on a fair to high return rate, may be ignored in the daily news chase. They are also dependent on the participant's views and perceptions, which may be distorted by a wish to please the surveyor (If I give them what I think they want, then they'll go away!) or which may be markedly different than their actual behaviors. Hence, the reliability of such data may not be optimal when considering context. In the case of information needs and behaviors, which are considered separately here, both participant perceptions and facts were necessary. Observing and recording what journalists do, rather than surveying them on this subject, seemed a more reliable method for obtaining data on behavior, while interviews may reveal perceptions of information needs.

Three journalists were observed over the course of a regular work day lasting between 8 to 13 hours. One journalist worked at a local broadcast affiliate of a major news organization, while the other two reporters worked at the same daily newspaper in a small metropolitan area. The researcher was allowed access to e-mails, personal computers, copies of relevant documentation, and other pertinent data by the subjects.

By observing each participant for a full work day, the investigator gathered data about how journalists spend their work days and allowed immersion in journalistic work practice and culture to occur. One limitation of the study is that in spending only one day with each participant, the observer is uncertain of capturing atypical events that can (and did) occur. Interviews conducted approximately two weeks after the observation via electronic mail revealed data regarding each reporter's attitudes and perceptions regarding their own personal information seeking needs and behaviors. Anomalies occurring during the observation were discussed at that time.

The type of journalism being practiced and the presence of library facilities are the two main independent variables considered at the research sites. Other such variables that must be considered include other information technologies that may be available to the subjects, including fax, electronic databases, computing systems, etc.

As this study is qualitative in nature, the bulk of data was collected via observation notes taken by the investigator and interviews conducted via electronic mail and printed later. Finally, inventories of the participants' work areas were, both office, desk and computer desktop resources for information were logged.

Data is analyzed within the theoretical framework of Sonnewald's information horizons and Solomon's information mosaics, discussed earlier in the literature review section. Comparative analysis of each participant with each other coupled with comparisons to the findings of Fabritius, on information behavior, and Nicholas and Martin on information needs is also considered.

While this study is comprehensive in scope, in that it captures the full spectrum of information behaviors during the course of a work day, it seeks only to capture a "day in

the life" of each participant involved. This strategy is both its strength and weakness. On the one hand, snapshots of journalistic practice, heavy on descriptive detail, can give researchers many clues into their information behavior patterns and needs. However, snapshots give us only a picture in time, one that is open to rapid changes and needs to be constantly updated, to account for changes in journalistic practice and innovations and advances in information technologies. In the end, the data provided here can give us only clues, at best, as to needs and behaviors of those studied. For the purpose of this study, it may be all that is needed, but it also may not be enough. Consequently, it should be viewed as a starting point for further research, perhaps more comprehensive and longitudinal in nature.

Case Studies

Participant 1: Chris, Sports and Television

Background

Chris is the sports director at a local television station in Washington, D.C. Chris' duties include supervising a staff of eight that produces, writes and edits sports stories for the news. Along with his supervisory position, Chris is the main sports anchor on 2 to 3 nightly newscasts, appearing on the 5:30, 6:00, and 11:00 PM shows nightly. Chris works five days a week, Sunday through Thursday, with Fridays and Saturdays off, unless there are special circumstances, such as a local sports team/celebrity who is playing their sport on a national level, for instance, the NCAA Basketball Tournament. Chris has been a broadcast reporter for about 10 years. He did not originally plan on the career nor did he study journalism in college, but instead was "recruited" into the business after a short career in professional sports.

Observation:

Chris was observed on a Monday in March. During this time of year in Washington, basketball (college and professional) and professional hockey are in full season. Other sports normally covered by the sports department, baseball and football, are off-season, but news on injuries and personnel changes are routinely monitored and reported. Mondays are often "slow" sports news days during this time of year because basketball and hockey aren't usually played on Mondays. As a result, there are not a lot of game highlights to plan into each sports segment.

Chris's office is located on the top floor of the television station, one floor above the general newsroom and the television studio. The entire sports department is housed

there. Chris' desk is situated at the west end of an open office space with a large picture window behind him. Along the north wall, a bank of six televisions and videotape equipment is housed. Four televisions play continuously, with the volume muted. CNN, and the three other competitors play on two televisions, which are equipped with split screens, while two other televisions feature information on upcoming feeds that are being offered by both CBS, the network that his station is affiliated with, and by CNN. The east wall, directly across from Chris' desk is a library/archive of sports stories that have previously aired. Notebooks are located nearby that allow users access to the collection, if necessary. The middle of the room is home to two desks used by the other sports reporters, editors and producers who work in the department. An additional three desks make up the south side of the department and function as a wall to the rest of the office area which is used by other people at the station. Just down a short hallway, a small room is home to more editing equipment and is equipped with a pocket door to allow for quiet and privacy. A large whiteboard sits to the left of Chris' desk which is littered with a dictionary, a few piles of paper, including that day's Washington Post, old Sports Illustrated issues, New Yorker magazines, press releases and press kits from various sports ventures in the area, the Redskins rosters, personal letters from fans, and ACC conference information. Just behind the desk, along the window, sits a makeshift bookcase with yearbooks of various sports teams. Chris calls the area where stuff is piled on his desk "exile," which proves to be true, as during the course of this particular workday, he neither looks at nor uses anything on his desk, save his computer notebook and the telephone.

The day's work begins at home with telephone calls to his executive producer, Mike, whose main job duties consist in helping Chris to execute (hence the title) the daily sportscasts by making sure that equipment and personnel are available to travel to cover various sporting events and sports feature stories. Mike assists Chris in keeping track of the progress of editing stories, arranging interviews, staying in touch with sports information directors of various teams, as well as acting as a liaison with other general news personnel. Mike is an important source of information for Chris, and the two men remain in close contact throughout the course of the day. These first few phone calls consist of discussions surrounding the big sports news story of the day: three area men's college basketball teams have been picked to go to the NCAA basketball tournament. All of them are scheduled to play in Boise, Idaho. Chris and a cameraman will be there to cover the games, so travel arrangements must be made and interviews need to be scheduled. Chris and Mike also discuss a few other sports stories that they are working on for that evening, namely, a scheduled satellite interview later that day, with the ex-coach of the Indiana University men's basketball team, Bobby Knight, and the city wide high school basketball championships that will be played that evening. He then skims the Washington Post, and the New York Times sports pages. Using his home computer, he surfs the web for information from ESPN, CNNSI, CBS Sportsline, and www.finalfour.net. Using a device he calls a "c-pen", which acts as a type of scanner, he inputs all relevant information into his PDA for later use. He is finally ready to leave for the office.

At the office, Chris will first check the producers' schedules to find out how much is allotted for his segment of the three different newscasts at 5:30, 6:00 and 11:00 PM.

Chris receives this information by logging on to the network via his computer. The producers place the schedules on the computer network so all the reporters know what stories will get airtime and how much airtime each will receive. This is crucial information because it will inform the editing of the various stories Chris is working on. It will also determine how many sports stories can air on a given newscast.

After learning the amount of airtime he is to receive, he checks his email and then calls a former sports producer currently working on the station's web site and requests a face to face meeting. When he arrives, they discuss what sports stories will appear online that day, and a forthcoming contest the station is sponsoring that is accessible only via the web. The contest will allow viewers to compete with him in guessing who will win all the scheduled NCAA men's basketball games that will be played in the next few weeks. They discuss prizes and other information necessary for him to impart during that segment of tonight's sports broadcasts.

After consulting his executive producer, a sports editor, and another sports reporter, he outlines what they feel will be the four big stories of the day: the Bobby Knight Interview, High School Basketball City Championship, NCAAs (local teams), and the signing of a (now) former Redskin by the Philadelphia Eagles, new information that was received from watching the sports wires over the Internet. Lastly, he can't forget the promo for the web contest.

Chris then prepares questions for his upcoming interview with Bobby Knight and writes basic scripts for the 5:30 and 6:00 PM sportscasts using the information he's received from face to face discussions with his colleagues and the information he has gleaned from the Internet that he put in his Palm Pilot earlier in the day. Newspaper

stories are dictated by length measured in inches. Editors, when assigning a story to reporters relay the information on story size. By contrast, broadcast news stories are measured in time, seconds usually, rather than minutes. While Chris is the sports director at this station, he does not get to determine how much time each story will receive. That job goes to the producer(s) of each nightly newscast.

The sports segment of a local television station's news program is usually given anywhere from 1 to 5 minutes of air time on a program that runs, excluding commercials, about 23-25 minutes. Because time is so precious, a large portion of the sports reporter's day is spent trying to decide how to portion out the time that is given for each newscast, which can vary from day to day and from show to show. Today, Chris will get about one minute during the 5:30 newscast, two minutes and twenty seconds for the 6:00 PM newscast, and about two minutes and forty seconds at the 11:00 PM newscast. Clearly, his scripts are extremely short and will be highly dependent on the footage that will be shot later that day to accompany them.

After a quick self-administered makeup job, it's now time to go on camera for his taped interview with Bobby Knight. Chris goes downstairs to the television studio and is assisted by personnel in the studio in contacting Knight via satellite feed. He is one of several reporters that day who will speak to Knight at this pre-scheduled press opportunity. Each reporter receives five minutes of time alone with Knight to ask questions and is free to air all or part of the interview. Before the interview, Mike tells Chris that the topic of Knight's firing from Indiana University is off limits. All other questions are welcome. From his earlier research on the Internet and his discussions with colleagues, Chris knows that there are rumors that Knight will be named men's basketball

coach at Texas Tech. He plans to focus much of his few minutes with Knight on this topic and the recent report in the Washington Post that Knight is going to sue Indiana University for slander. Is this particular topic the same as Knight's firing? Chris doesn't think so. His executive producer is more cautious. In the end, it's Chris's call whether or not he will use the information he has received.

Once Chris is hooked up with Knight his questioning begins. He asks a few questions about Knight's predictions regarding the NCAA Tournament, as Knight, like Chris, is involved in a contest sponsored on a web site that seeks to pit Knight's NCAA picks against the visitor to the web site. Unlike Chris's contest, Knight's sponsors will give any person who picks the winner of all 33 games a prize of \$10 million. The topic quickly turns to rumors of Knight's possible job at Texas Tech, then to the alleged impending lawsuit against Indiana University. Knight grows increasingly agitated during this line of questioning and gets visibly angry with Chris, chastising him on camera for having poor information on the IU lawsuit. Chris asks Knight to set the record straight. Chris goes overtime by approximately three minutes with his questions and ends the interview feeling pleased with himself. While Knight may have gotten angry with him, he got answers from him regarding his new job prospects and his side of the story regarding the Indian University lawsuit. Chris feels he's scored a scoop, which in journalistic parlance means he is the first to get Knight's side of the story. Whether this is true nationally, Chris can't determine. However, he knows he will be the first in the Washington, D.C. area to get the story, as his interview with Knight was an exclusive in the Washington D.C. area.

Back upstairs, a sports editor and Mike are already hard at work editing the Knight interview. Chris quickly hurries upstairs for a face to face conference regarding the interview and what portions are best suited for tonight's newscasts. After much wrangling, all three come to a consensus that bits on Texas Tech and the Indiana University lawsuit are ripe for air time. They now must be edited down to under 30 seconds each and packaged.

As air time grows closer, Chris readies himself for the early evening sportscast which will be done on a remote location, away from the station. As planned earlier in the week, Chris will report the day's sports news during the 5:30 and 6:00 PM telecasts from the High School City Championships. Consequently, he must drive over the location early to check on sound, lights and location to make sure the satellite link up with the station goes off without a hitch.

Several calls via cell phone to the station allow him to keep track of the editing on the Knight pieces and on interviews another sports producer has received from the local basketball coaches who are going to the NCAA. Once he's arrived at the location, press credentials must be picked up. While waiting for his producer and camera/sound man, Chris consults his Palm Pilot for his script notes, email, and any late breaking news stories from Internet news web sites via a special web connection, and continues to discuss plans for the 5:30 and 6:00 PM telecasts. It is determined via conferencing with the 5:30 news producer, that there will only be enough time to report the day's top sports stories and tease the audience to watch at 6:00 and 11:00 PM for accompanying video footage regarding the Knight interview and the results of today's high school championship while the game plays live in the background. Everything is checked, and

Chris goes on the air for the 5:30 newscast briefly. After he is off the air, Chris and Mike run down the order for the 6:00 PM sportscast, which will be a bit longer. During the 6:00 PM show, the basketball game is again live behind them while Chris gives reports on the day's top sports stories, with only Knight's interview getting any video. Total air time for Chris: less than three minutes of the 80 minutes of local news that has aired this evening.

While Mike and the cameraman will stay to cover the rest of the game, Chris leaves the basketball game to drive home a short distance away, for dinner and time with his family. It's 6:30 PM and Chris has been working since 10:00 AM, and still must prepare his 11:00 PM newscast. Chris has not eaten since morning, as he did not stop for lunch or a snack once during the day. He's hungry and has earned this break.

Chris is back to the station at 9:00 PM to prepare for the late evening newscast. He checks his computer for the project amount of time he will have at 11:00 PM, checks his email and the web for any late breaking news. A new sports producer is on duty and he checks with him to get the status of the edited stories. What is ready to air? During this time Mike and the cameraman arrive from the game with footage that must be edited for air. While they busy themselves with this task, Chris gets a quick run down from Mike on the game's highlights, and begins to write his script for 11:00 PM – this time on his computer which will send the text to the studio for reading from the teleprompter. During this time, the producers show Chris a funny bit from the high school game that they have captured, while it is not strictly a “sports” highlight, it is the type of the thing that plays well to the audience, and Chris calls down to the 11:00 PM news producer to request extra time to air it. He agrees, and as Chris retouches his makeup, he goes over

his script, checks for late breaking news on the Internet again, and readies himself for airtime. It is all too quickly 11:15 PM, and Chris must go down to the studio to go on the air. Once the show is over, Chris leaves the studio, gets an expense report to prepare for tomorrow's trip to Boise, gets in his car and goes home. Chris has spent 13 hours today for less than four minutes of aired sports news.

Participant 2: Gina and the Education Beat

Background:

Gina, is a general reporter for a medium-sized daily newspaper located in Myrtle Beach, a coastal resort city in the Southeast region of the United States. Gina has been at her job since graduating college two years ago. She is assigned to the education beat, which covers elementary school through college. Gina works five days a week, approximately 10 to 12 hours a day, sometimes more. An editor assigns her daily stories.

For use by Gina and other reporters, The Myrtle Beach Sun Times has a library staffed once a week by a part-time librarian. An online catalog gives access to newspaper archives. Four rows of bookcases house about seven hundred to nine hundred titles with only a few of them being new (e.g., 1999-2001) titles. There are several general interest magazines arranged by subject and catalogued using the Library of Congress classification system.

Observation:

Gina's personal desk area is a cubicle in the general reporting area. The walls of the general reporting area are wallpapered with maps (i.e., subject maps including school district, political district, road, terrain and climate maps of Myrtle Beach and of South

Carolina. Several televisions are mounted on the walls. They are turned off except during the local news times. A police scanner runs continually at medium volume. A large bulletin board by the editors' offices holds the front and metro pages of the daily news in the general region, as well as the day's USA Today front page and Life sections. At the back of the reporting room are Library/Archives and Graphics.

Gina's desk itself is cluttered. A personal computer is the nucleus of the desk. Post-it notes are plastered all over the computer. Mail is stacked to the right side of the computer and on a small shelf above the desk area. A dictionary, telephone and piles of paper cover her desk. Actual workspace available is no more than a foot across. Besides composing, her personal computer provides her with Netscape, Email, Interoffice Mail, and a software program for reporting. Archives are available via her desktop.

She has been assigned two stories for the day: renovation of a school building and "Spring Break" students in town. The first story she covered was the renovation of the school building. After making telephone calls to the architect's office, a graphic artist, and an education source, she left to interview the architect in person, with the graphic artist in tow. Gina hopes that having the graphic artist see the architectural plans of the proposed renovation will make the creating the graphic needed for the paper much easier. A lost address, no cell phone, and a side trip to get the address delayed the meeting somewhat. When she finally arrived at the architect's office, she viewed plans for the school renovation all the while being lobbied by the architect regarding the slant of her story and future stories.

Leaving the architect's office, she returned to the Sun Times for a staff meeting and follow-up work on the school renovation story. She used other reporters as sources

for phone numbers to get quotes from public officials, resorting once to the use of another person's rolodex. If Gina has a phone list or a rolodex, it's not visible or available. Phone numbers seem to be either committed to memory or stored on post-its.

Her day continued with a discussion with her editor regarding other stories and problems with sources. Continuing with the school renovation story, she cross-checked a graphic against a map. She then called her messages (saved via voice mail technology) and emailed an editor regarding a tip from another reporter (i.e, knife at an elementary school). Should she chase down the story so that it can run tomorrow? Yes, she is told.

Consequently, she calls her sources in the school district regarding the knife story. No more information is available to her than what she previously knew, and the Board of Education won't comment. Gina quickly phones her colleague to ask for a copy of the police report. She'll have to use that report for this, her third assigned story of the day. It was now time to work on the Spring Breakers story, and she begins by phoning a photographer to accompany her. They find the story "on foot" walking up and down Ocean Boulevard looking for interviews. Gina interviews over 20 students with the photographer taking pictures of out-of-town students. With ample interviews and quotes down, she goes back to the Sun Times to write her story using notes from her reporter's book. She writes both the school renovation story and the Spring Breakers story. Gina's day has ended, twelve hours after it has begun. She won't know until late tonight or tomorrow what will run and how it will be edited.

*Participant 3: Mary, Crime Reporter*Background:

Mary works at the same daily newspaper as Gina. Like Gina, Mary is relatively new to the profession, and has held only two other job at a smaller newspapers. She has been working at the paper for about 3 years. Like Gina, she majored in Journalism in college. She has always wanted to be a crime reporter. Besides crime, Mary covers the courts and weather. In coastal resort cities, the weather can be a pretty big deal. Mary works five or six days a week, and starts her day early, at 7:00 A.M. Her days are about 10-12 hours long, depending on the stories on which she is working.

Observation

Mary gets into the newsroom at about 7:00 A.M. She has a daily routine that she practices without fail: she checks her email and goes about calling all the local police departments and coroners in the circulation area to find out if anything "newsworthy" has occurred overnight. For today, nothing new has come up.

Mary's desk is clean and uncluttered. While notes are taped around the perimeter of the computer, the desk space itself is remarkably devoid of paper. A list of signal code sheets for different local police departments is taped to the side of her cubicle. This information is used to decode messages that come across the police scanner. A pocket size law dictionary and a regular dictionary sit on a bookshelf. Like Gina, Mary's networked computer is equipped with an Internet Browser, an email program and software that allows her to communicate via interoffice email while composing her story. This program, Cybernews, has several features that aid her throughout the day.

After finishing her phone calls and reading her email, Mary checks the wires using the Internet. Once again, there is nothing happening in her beat. It's time to go to court.

All during this past week, Mary has been covering a major murder trial for the paper. A local man was murdered two years ago and after national exposure on the television show, *America's Most Wanted*, two suspects have been caught, charged and are now on trial. The judge on the case has allowed the death penalty to be applied to this case, and jury selection has been occurring all week. With the jury finally seated, today will be the first day of the trial, which is being covered by the local television station as well. Before she leaves, Mary makes sure to get an extra copy of today's paper for the victim's father, as she has been doing throughout the course of the trial.

Once at court, Mary takes her seat in the courtroom. Reporters are seated within the front portion of the room, directly across the jury, and adjacent to the defendant's table on the left and the judge on the right. Her close proximity to the individuals involved in the proceedings has enabled her to observe actions and expressions quite closely. As the trial begins, Mary pulls out two notebooks: both are sized 8 1/2 by 11". One is for the "blow by blow" proceedings of the trial, and the other includes several lists that Mary has developed, including information on possible witnesses and the jurors who have been seated, a result of her close inspection of the public information provided by the courts, her relationships with court personnel and other sources, and her daily attendance at the trial. Also in Mary's possession is a file with archived stories on the trial and other pertinent background information. She carries scratch paper for notes and pens in two colors: black and red.

During the course of the trial, Mary takes copious notes on the proceedings and includes observations regarding facial expressions and other behavior of all the participants. During lapses in the trial, she periodically goes over her notes and asterisks important points with a red pen, so that she can piece together her story easily when she gets to the news bureau.

While in court, Mary also gets an opportunity to chat with a local attorney not involved in the trial who tells her about a crime committed some time ago that is unsolved. Mary is familiar with the story and promises to get some information on the story. Rather than use her scratch paper, Mary writes important notes to herself on her palm, so that she won't forget. One of those notes is information regarding this particular story related by the attorney.

During a break in the trial proceedings, Mary overhears a conversation between two sheriffs seated near by. The sheriffs are discussing a case that will soon be heard in federal court regarding the police. It is somewhat controversial and Mary notes the gist of their conversation with a note on the palm of her hand. On the lunch break, Mary takes the time to call her editor to discuss the trial and calls a photographer to come up and get some pictures for the story.

After lunch, the trial reconvenes and to Mary's surprise, the prosecution has chosen not to call many of the witnesses listed. The defense calls no witnesses, and all too soon the trial is over and the jury is instructed to find a verdict. They return less than 10 minutes later, finding the defendant guilty. The next phase of the trial, which will deal with sentencing and the issue of the death penalty will occur on Saturday and into the

next week if necessary. The defendant's accomplice, who is being tried separately, is not scheduled for court until a few months later. Mary is far from done with this story.

Once the verdict has been read, Mary speaks to the state's attorney, the victim's father, the baliff and the defense attorney (who declines to comment). She also listens in as they are all interviewed for the local television news. She makes a quick call to her editor on her cell phone to tell him the verdict.

Leaving the court, she drives a short distance to the satellite news bureau that is located nearby, rather than go back to the newsroom which is about half an hour away. It's about 3:00 PM, and Mary doesn't have a lot of time to file a story for tomorrow's paper.

Once at the bureau, which is equipped with two phones, a fax machine, two desks and two networked computers, Mary calls her editor to say that she is beginning work on the story. During the phone call she learns her story may make the front page, a fact that Mary says motivates her to make sure the story is especially good. For Mary, that means the story has unique features, is well-documented, and well written. She checks her email and gets to work on the story. As she is writing, Mary uses her archive news file to fact check her story and utilizes an online thesaurus to help her "punch up" her lead. Mary uses the Cybernews software program to write the story. Like Gina, she takes advantage of the "cut and paste" features of the program and inputs her notes into a window to ease the construction of the story. Soon enough the story is finished and Mary e-mails it to her editor. She won't know until tomorrow if her story will make the front page and how it will be edited.

Results

Information Need and Behavior Analysis

The collection of data on information need has been largely ignored in the past because there has not been an established structure available for analysis and evaluation. (Nicholas and Martin, 1998). However, Nicholas and Martin (1998) developed a framework of twelve characteristics and five barriers regarding the information needs of journalists, as discussed earlier. Coupled with the information theories found in Diane Sonnenwald's paper on information horizons, some conclusions can be drawn regarding the relationship between information need and behavior in the case of journalists.

Subject

Many journalists report on only one or two special subjects. Nicholas and Martin say journalists express their information needs to others on these subjects in vague or generalized descriptions for three different reasons: confidentiality (they do not want to expose their information need to others so as not to lose its possible uniqueness), uncertainty (they are often unclear as to their exact information need), and professional arrogance (they see no reason to expose information needs, and feel they can satisfy them on their own).

In the cases discussed here, all three participants cover a specific subject for their respective news outlet: Chris covers sports. Gina covers education, and Mary covers crime and weather. The data collected does not support the assertion that journalists provide "vague and generalized descriptions" of the subject of their information needs. Both Chris and Mary are readily identifiable to many of their sources as being sports and

crime reporters; therefore, their expressed information needs on said subjects were often treated by their human sources with a high degree of specificity. On the other hand, in the case of Gina's story on college students spending their break in Myrtle Beach, the students were not aware that Gina was the "education" reporter per se, nor did she communicate to them a need for information beyond general reasons why they had chosen this town as their destination. Gina's relatively low need for information beyond the most general may be attributed to the fact that the story was considered somewhat "routine" to her, as she had done a similar one in the past, and felt she had accrued enough background information.

Function/Purpose

According to Nicholas and Martin, journalists have five purposes for information: fact-checking, current awareness, research, context, and stimulus.

The data collected from this study show there is evidence to support all of these information needs. All three of the participants engaged in fact-checking and current awareness to gain information throughout the day using a variety of methods. Chris used his cell phone, his PDA, and his access to the Internet and email to check the status of stories. Gina was somewhat more "low-tech," but still engaged in the same types of behaviors to satisfy these information needs. Throughout the day she utilized her telephone and her email to check the facts of her stories and get the latest information. Mary, too, took a more "low tech" approach, using her personal files and notebook equipped with notes and clippings to check her facts about the trial. Like Chris, she used a cell phone while traveling.

Chris used the Internet for research on his interview with Bobby Knight and believes it is a powerful tool in allowing him to develop interview questions that he might not be able to do otherwise. "I was able to locate information on an editorial about Bobby Knight in the *Lubbock Avalanche-Journal* [the location of Texas Tech, where Knight was slated to be hired as basketball coach at the time of the interview] because it was reported on the Internet. As a result of having that information, I was able to ask Knight about his feelings about the town and its media coverage of him."

The information need of context was evidenced by Mary's close observational notes of the facial expressions and body language of the participants involved in the murder trial.

Stimulus, which might be construed as the information need that best describes the anomalous state of need when one does not know exactly what one is looking for, is evidenced by all three journalists' use of the bookmark feature in their web browsers. This feature allows them easy access to information they feel is potentially useful or helpful for many of the stories they might be working on.

Nature

The nature or type of information need expressed by journalists can be classified into five distinct categories: conceptual/theoretical, historical, descriptive, statistical and methodological. Nicholas and Martin's findings suggest that the nature of most journalists' information needs are historical and descriptive.

The information collected by the journalists on the days they were observed tend to support the theory that the nature of most journalists' information needs are historical and descriptive. Chris's stories required that he have some deep background knowledge

of college basketball. Gina's story on the school building required her to have some descriptive knowledge of the plans of that building, and her story on the Spring Breakers gained context from her historical knowledge of reporting the past few Spring Breaks. Mary's story on the murder trial required her to have strong descriptive knowledge of goings-on and a firm grasp of the history of the crime.

Chris's subject -- sports -- also gives him a strong need for statistical information. The scores of various games and the statistics that highlight a particular athlete's performance often form the bulk of the scripts he writes in support of the live and videotaped content he produces.

The search for conceptual information on a particular subject or situation was not explicitly observed during the study, but it is notoriously hard to detect because journalists, depending on their experience level and appetite for knowledge, may have already accrued it or may seek it out only if the story demands it. For example, Mary keeps bookmarks on her browser to various weather sites in case a particular weather event occurs so that she has access to the conceptual information regarding the "how and why" of such events.

Methodological information is also driven by the situation. All of the journalists studied remark that such information is only sought out if the story demands it. For instance, Gina needed information on the exact appearance of the proposed school building renovation project, so she contacted the architect to arrange a viewing of the plans. During the course of her visit with him, he gave her additional information on how the plan was developed and why it was developed in that particular way.

Intellectual Level

The intellectual level of information needed has been defined by Nicholas and Martin as the "minimum extent of knowledge required by the user in order to understand." They further reason that because journalists are information producers as well as information gatherers, a large portion of their job is translating information into a format that is readily understandable by those of an average intelligence. Because of this, information obtained by telephone or personal contact is critical to the journalist because they can use questions to check their own understanding of the material, as well as the understanding of others.

From the results of this particular study, it seems clear that Nicholas and Martin did not overstate the importance of the telephone or personal contact. All three of the journalists involved in the study were observed using the telephone and seeking out personal contact throughout their day to help them get the job done. However, the subjective and ambiguous nature of determining understanding is often difficult to negotiate for the journalist.

An exchange observed during the course of Chris's day regarding the editing of the Bobby Knight interview brings home the difficulty in determining intellectual level or understanding of information.

Chris and Bobby Knight had a lively exchange regarding the possible filing of a lawsuit against his former employer. Knight said that he had not filed suit, but had instead sent a letter to the university to tell them he was reserving the right to file suit. Chris maintained that such a letter was a "de facto" suit, although he did not frame it in those terms. Knight claimed that Chris wasn't listening and didn't understand him. The

editors of the piece believed Knight made Chris look "stupid" in the clip. Chris disagreed. He felt he understood the legal tactic of reserving the right to sue was the precursor to suing. This lively inter-office discussion revealed that Chris and colleagues perceived the viewers of the program to be highly educated Washingtonians who are often well-versed in Machievellian legal practices, and aware of the commonly held belief that Knight is a difficult interview, often prone to claiming he is misunderstood. The exchange was not edited and aired later that evening.

Mary's ownership of a legal term dictionary, although not used during the observation, is also evidence of the reporter's behavior attempting to meet the information need of ensuring that information is at an understandable intellectual level for herself and her readers.

Viewpoint

Points of view or angles to a story represent an important information need of journalists because they represent the crux of the journalists' job: objectively seeking not just the facts of a situation, but the points of view of a number of different individuals regarding that situation.

Throughout their day all three of the journalists involved sought the viewpoints of several different individuals affected by or involved in the stories they were covering. Quotes or sound bites from these sources represent the meat of what is being reported.

Quantity

Nicholas and Martin claim that journalists have "large and insatiable information appetites" and evidence this by enumerating the large amounts of information resources

available to them at the office. They characterized the journalists they studied as "wallowing" in information and as "generally wasteful of it." They further remark that most journalists have more information on a given situation/story than is actually used.

The observations of the three journalists being studied tend to reinforce Nicholas and Martin's findings about the quantity of information surrounding the journalist and their use of it. The desks and office space of both Chris and Gina support this notion, as does the copious notes taken by Mary during the course of the murder trial. All three of the journalists were observed to be in constant search of information even as they were surrounded by it, and all three of them had amassed a huge amount of information on their stories for the day that was never used. For instance, Gina chose not to use quotes from every student she interviewed for her story, and Chris had several minutes of interview time with Bobby Knight that did not air.

Quality/Authoritativeness

The quality of the information that journalists need is obviously subjective, but is nonetheless a critical information need, and one that is constantly on the journalist's mind. Evaluating the quality of the information received is crucial to the journalist because the integrity of the story they write depends upon it. Nicholas and Martin observed that most journalists cross-check the quality of the information they receive against other news services. The problem of verifying the quality of information received directly from sources such as unpublished documents, oral sources, or public relations materials further complicates this information need, and often puts the journalist at risk of reporting stories inaccurately.

The length that journalists will go to in order to ensure that the quality of their information is good was observed during this study. Gina was willing to travel to the architect's office to see the model of the school renovation project rather than rely on a telephone interview description from a source at the Board of Education. She also asked a colleague to bring her a police report about the knife brought to the elementary school rather than risk reporting the event inaccurately. Mary requested access to public documents available about the trial, such as the witness list, to ensure that her reporting was accurate as well. Chris is a self-described maniac about cross-checking statistical and historic information against established leaders in sports reporting such as ESPN and Sports Illustrated to ensure that he is not inaccurate when reporting a particular story.

Currency

All journalists are under pressure from their employers to "scoop" the competitors; that is, to be the first to publish or air unique information. As such, their need for up-to-date information would seem to be critical. However, Nicholas and Martin found that about 1/5 of all the journalists they studied regularly required information more than two years old, suggesting that the need for current information may be somewhat overstated.

Two participants involved in the study covered subjects that demand currency -- sports, crime and weather. Chris is a firm believer that his ability to scoop the competition at the local level is dependent upon his constant and dogged pursuit of the latest information which is often found on the Internet in his opinion. Chris believes that the sources of information for his subject, such as athletes, coaches, agents, and media contacts for sports teams, go first to the national press outlets (such as ESPN and

CNN/Sports Illustrated) to break stories because sports have become a national pastime and people throughout the country have interest in sports teams and celebrities that may not be in the town where they live. Because of this new phenomenon in his field, Chris is a frequent visitor to the CNN-Sports Illustrated web site, the ESPN web site and CBS Sportsline web site. All three of the news outlets update their web sites on a continual basis, and Chris's regular visits to the sites throughout the day have led him to scoop the local competition three different times by his count.

Mary also discussed currency. Because Mary works at a different outlet than Chris, (print versus broadcasting), and because Mary's newspaper is the only one in town, Mary feels her competitor is the local television station. However, Mary feels she can't always "win" some scoops because of time. In the case of the murder trial when the surprise was how quick the guilty verdict came down, Mary could not scoop the television station on the news. They could report it in a matter of hours. Mary's story would not be published until the next morning. To compensate for the loss of this scoop, she can provide information that cannot be covered by the television station because of the relatively small amount of time they have in which to work. Mary strives to "stay away from rehashing the evening news" and concentrates on original and useful content.

Speed of Delivery

Closely connected to currency is speed. Journalists often need information as quick as possible because they are under deadlines that require them to obtain, synthesize and report information in a matter of hours. Nicholas and Martin have observed that the need for speed is increased by the journalists' proximity to their subject. In other words, "the closer [a story] is to home, the greater the pressure for rapid reporting." Because

speed is so crucial to their job, Nicholas and Martin have observed that the telephone takes high importance as a tool for journalists in expressing their information needs. The journalists they observed averaged six telephone calls in the space of 45 minutes.

Speed was an observable need during this particular study. All of the participants faced a daily deadline and needed to urge sources to give them speedy information. An example of this is the use of email which can be seen as both a barrier and an aid to helping speed the retrieval of information in the case of these participants. All of the journalists observed were vigilant in their keeping track of received emails throughout the day and seemed to have some sort of internal hierarchy of importance in answering it if it was requested or required. All of the participants also used email as an alternative to the phone when it seemed efficient to do so, i.e., the source was unavailable by phone and the journalist was anxious to put their information need at the "feet" of this source. To the extent that their requests via email were answered in a speedier fashion than they would have been via another method, such as in person or by telephone is difficult to determine.

Chris, in particular, has a high need for speed of information delivery because the outlet he works in is measured by time. As such, Chris takes every advantage of technological resources that he believes aid him in producing content more quickly. His use of a cell phone with headset allows him to do two things at once: perhaps put on his makeup for an on-air appearance at a remote location while he checks the status of the stories with his executive producer. His use of the PDA and the additions available for it also allow him to retrieve and seek information from his computer without being tied to the sports desk.

Place of Origin

Information needs of journalists can also be expressed by place of origin.

Nicholas and Martin have observed that regional journalists have little need for online databases, national news, books or magazines and instead need information directly from sources developed in the area where they are reporting.

All of the journalists who participated in the study were practicing their craft at a local level. Nicholas and Martin's assertion that they had little need for information that was "national" in nature seems to be dependant on the subject being covered. As discussed earlier, it is Chris's opinion that sports have become a national pastime and that most professional sports team do not necessarily develop "source" relationships with local reporters, preferring instead to break stories with national outlets such as ESPN. Neither Gina nor Mary was observed to use online databases, national news, magazines and books during the day they were observed; however, both say they consult them for background and research on subjects when necessary.

Processing and Packaging

Nicholas and Martin have observed that journalists are generally suspicious of "packaged" information received from sources such as public relations departments. Nicholas and Martin also point out that journalists package information themselves and often express information needs for the packaged information of other journalists found in clippings or archive.

The relative suspiciousness of journalists towards what they consider "packaged" information was observed by the apparent disinterest shown in some of the unsolicited information they receive. Chris's desk is littered with press kits and proposals for stories. They are ignored. The media guides for sports collect dust behind his desk and are used strictly for spell checking names or for the statistical information they hold, if and when they are used at all. Journalists may also be seen to receive "packaged" information whenever they are lobbied by sources to pursue a particular story, as in the case of Gina and the architect who wanted her to write a story about his firm. While she was polite to his entreaty, she left the office unmoved by his efforts.

Barriers to Meeting Information Needs

Time

Nicholas and Martin assert that the pressures and constraints of time vary from newsroom to newsroom. However, they also assert that the general acquisitive nature of journalists assist them in fighting this particular barrier to meeting their information needs, because they are constantly soaking up information they may not currently need, readying themselves for the day when it may become necessary. This particular coping skill seems to be a function of both a journalist's individual personality and their years of experience, with seasoned reporters generally having the benefit of institutional knowledge that young reporters do not have.

Chris has more experience as a journalist than either Gina or Mary, and as a native of the city where he works, a firmer grasp of the intricacies of the subject and location of his reporting. Chris was observed to make good use of his time during the

day, but showed frustration in his ability to use the information he had retrieved and produced because adequate time and attention is not given to his subject at the station where he works.

Gina's strategy for beating the "time barrier" in getting her information needs met is the high value she places on colleagues in assisting her. Throughout the day, Gina's reliance on the information held by other reporters, such as the names and numbers of sources she could use for her stories helped her to get her information needs met much more quickly than if she had sought them out through other methods, such as looking up a number in the telephone book.

Mary's time barrier was the inability to "scoop" the television station on the guilty verdict in the murder trial. Because she did not have time on her side, Mary opted to search for and acquire information that would be unique from the basic facts reported on television that night.

Access

This particular barrier can be defined as the inability to obtain the information needed. Nicholas and Martin have found that news organizations try to optimize access through the open plan of the newsroom, allowing for free-flowing conversation and the opportunity to overhear or observe others' information and by making available several information resources.

The layout of the newsrooms of the reporters observed lent themselves to this free-flow of information. Both Chris and Gina took advantage of the relative closeness of their colleagues to discuss their stories and the ones their colleagues were working on as well. Because Chris's department was segregated from the rest of the newsroom, he

and his staff were not distracted by other subjects. However, this isolation may also create a barrier in receiving some information that flows throughout the newsroom downstairs and can sometimes result in his being "out of the loop" on some issues occurring at the station.

Conclusion

The journalists who agreed to participate in this study showed evidence of having all of the information needs characterized by Nicholas and Martin. For the most part, the journalists involved did their best to meet their information needs and were able to find creative ways in evading the barriers to meeting their information needs. The purpose of this study was to observe and interview these participants to gauge whether their information needs match their information gathering behaviors. They do. To the extent that emerging technologies such as wireless phones, PDAs, and Internet news services change information needs depends on the perception of the journalist involved and the environment in which they work. Sonnenwald's proposition that information horizons are made up of the context, situations and social networks that surround a person seem to reinforce this.

One of the journalists studied believes the subject he covers and the manner in which it is covered is changing rapidly, as such his information needs have changed. He has adapted his information seeking behavior to the best of his ability to meet those changes. The two other journalists participating in the study have not experienced a change in their information needs because of technology, but also have not worked long enough in the business to have experienced a change.

As for the role that news libraries play in assisting journalists with new information needs, the data found here suggests that knowing one's patrons remains the most important method of determining how best to service their needs. While none of these journalists have news researchers at the news outlet where they work, the data they

have supplied suggest ways in which news researchers could assist journalists who work in similar situations. For instance, having technical support available for resources such as PDAs would be useful as would providing training on effectively using resources found on the Internet.

Further research on the use of technologies such as PDAs may provide insightful into the nature of why and how journalists perceive they will need and utilize information. Research along this line may also reveal any possible changes to their information seeking behavior. A longitudinal study with the same journalists or with a larger number of journalists practicing in a number of different areas and tracking their perceptions of changes to their information needs and changes in journalistic culture would perhaps better answer this particular area of research.

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Appendix A: Nicholas and Martin's

Characteristics of Information Needs of Journalists

CHARACTERISTIC:	CHARACTERIZED BY:
Subject	Type of story, Specialty Areas
Function/Purpose	Fact-checking, current awareness, research, context, and stimulus
Nature	Concept/Theoretical Information Historical information, Statistical Information
Intellectual Level	Minimum extent of knowledge required by user to understand information (User understood to be both writer and audience)
Viewpoint	Objective or subjective
Quantity	Appetite for information
Quality/Authority	May be subjective, but observed by cross-checking with other sources
Currency/Date Range	Latest information available or everything available
Speed of Delivery	Rapid is best
Place of Origin	Dictated by scope of story
Processing and packaging	Suspicion of slick information

Appendix B:

General Interview Questions

1. How do you get story ideas?
2. Describe how you gather, retrieve and evaluate information for a story.
3. When do you know that you have enough information?
4. What do you consider your most important information need?
5. How do you access information?
 - a. Is that your preference? If so, why?
 - b. If not, what would your preference be? Why?
6. What is your definition of information?
7. How has electronic information changed the news?
 - a. Has it affected your habits?
8. What do you value more in terms of information -- speed or comprehensiveness?
9. How important is to receive comprehensive information?
10. What are the best sources of information?